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AUTHOR	Hurme, Pertti
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ABSTRACT

This study described the experiences of a communications technology course for first-year students in a communications department, arranged in 1994-96. The learning process was monitored by means of a qualitative analysis of diaries written by 161 first-year students at the University of Jyvaskyla, Finland, complemented by a survey of the communications technology skills of the students at the onset of the course. The purpose was to examine student perceptions of communications technology and of learning communications technology as well as to develop the curriculum of the communication technology course. Three major themes emerged in the diaries and the survey: (1) change in the entry level of students; (2) learner types; and (3) concerns of the students about the level of difficulty of the course, fellow students, resources, and the future. Satisfaction with the course appears related to learner type: those well versed in computers were critical, whereas those who had little experience about computers or who were apprehensive of computers were satisfied and learned much during the course. (Contains nine references and a figure of data.) (Author/RS)

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The Communications Technology Course in a Communications Department: The Finnish Experience

Pertti Hurme
Department of Communication
University of Jyväskylä
P.O. Box 35, 40351 Jyväskylä, Finland
phone: +35814601515, fax: +35814601511
email: hurme@jyu.fi
http://www.jyu.fi/~hurme

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The Communications Technology Course in a Communications Department: The Finnish Experience

Pertti Hurme

Abstract

The paper describes the experiences of a communications technology course for first-year students in a communications department, arranged in 1994-96. The learning process is monitored by means of a qualitative analysis of diaries (N = 161) written by students, complemented by a survey of the communications technology skills of the students at the onset of the course. The purpose of this study is to examine student perceptions of communications technology and of learning communications technology. The study also aims at developing the curriculum of the communications technology course. Three major themes emerge in the diaries and the survey: (1) change in the entry level of students, (2) learner types, and (3) concerns of the students about the level of difficulty of the course, fellow students, resources, and the future. Satisfaction with the course appears related to learner type: those well versed in computers were critical, whereas those who had little experience about computers or who were apprehensive of computers were satisfied and learned much during the course.

Keywords: Communications technology, instruction, learning, learner type, computer anxiety.

The Communications Technology Course in a Communications Department: The Finnish Experience

1. Introduction

University departments of communications share the challenging task of providing their students with basic skills in communications technology. This paper describes and discusses the experience at the Department of Communication, University of Jyväskylä, Finland in 1994—96. During this period, a course in communications technology has been arranged for first-year students of the Department at the onset of their studies. The course comprises lectures, workshops, study visits and independent study. The Department has an annual intake of 50—60 students. On the basis of an entrance examination which includes an interview, the students are admitted to one of three subjects: Journalism, Organizational Communication and PR, or Speech Communication. Most of the students in the communications technology course have their major subject in one of these communications subjects. However, some of the students taking the course major in another subject (e.g. Sociology, Economics or Finnish) and are studying for a communications minor. Most of the students come directly from secondary school (at the age of 18 or 19), but a substantial number has already studied elsewhere or has work experience—often in a communications profession. Thus, the students form a heterogeneous group. All students aim at the MA degree; it usually takes about 3—4 years to complete a BA degree and 2 more years to complete an MA degree.

Computers are basic tools that communication professionals need to be able to use for many purposes. Consequently, the sooner the students learn to use a computer the better. The Department tries to make as many computers as possible accessible for students—at present, we have about 20 computers with Internet connections at their disposal. The computers can be used also in the evening and during weekends.

Even though Finland is one of the world leaders in the adoption of computers and the use of the Internet (see e.g. Network Wizards, http://www.nw.com), all first-year students are not comfortable with computers and communications technology. Finnish schools try to teach basic computer skills for all pupils, but some of them remain uninterested or even apprehensive about computers.

The purpose of this study is to examine student perceptions of communications technology and of learning communications technology. The study also aims at examining the entry level of students in regard to communications technology. A further purpose is to develop the curriculum of the communications technology course.

2. The Communications Technology Course

Goals

The goal of the course in communications technology is to provide the students with basic knowledge and skills in communication technology useful in their studies, both in communications and in other subjects. A long-term goal is to prepare the students for the communications technology environment in their future work. Depending on the study program in each discipline, the students will later take advanced courses in one or more areas of communications technology.

The course also aims at developing the social skills of the students. The first year is crucial in their socialization in the academic world. It is also crucial for their socialization among the students in their discipline and in the Department. The course brings together all the first-year students of the three disciplines right at the beginning of their studies.

> *I was pleased to see that the course was for all new students at the Department.*

The course has further goals. One is to involve the technical staff in a project covering major areas of expertise at the Department. The faculty at the Jyväskylä Department is rather small; the involvement of the technical staff in workshops and in guiding the students in e.g. computer skills and video editing is valuable (cf. Baume 1995). Another goal is to involve students to participate in the production of campus TV, campus radio (both of which heavily rely on students of communication) and the departmental WWW pages.

A further goal is ethically problematic. If the students understand the potential of computers in communication, they probably want to own a personal computer. Is that what we want? Yes, we believe that computers are necessary tools for communication professionals. In fact, many of the students (albeit at present still the minority) own a personal computer when they enter the Department. Several of those who do not own a computer write in their diaries that they plan to buy one when they have enough money. At the same time, it is perfectly possible to study without bying a computer of your own, as there are computers for students at the Department of Communication and elsewhere at the university.

Contents

The communications technology course comprises lectures, workshops, study visits and independent study individually and in small groups. The lectures are typically state-of-the-art reviews, usually given by the faculty but occasionally by staff from e.g. the Continuing Education Center and the regional radio station. The topics of the lectures are

- an overview of communications technology,
- print media,
- newspaper design,
- television and radio,
- multimedia,

– the Internet,
– electronic publishing, and
– video conferencing.

The workshops are conducted by the faculty or by the technical staff (with their consent, as teaching is not included in their job contracts). The workshops comprise
– word processing with Windows PC,
– word processing with Macintosh,
– use of the Internet services (email, news, WWW; especially "search engines"),
– use of video camera and video editing,
– services at the Department library (electronic catalogues, CD-ROM databases),
– research laboratory designed for measuring audience reactions.

The course also includes study visits to
– the Computer Center of the University of Jyväskylä,
– the local newspaper and printing house,
– and to the regional radio and TV station.

The students carry out several assignments during the course. Each student writes (with a computer) a diary describing her or his learning process. The students are encouraged to use email to communicate with instructors and with each other. They carry out information retrieval assignments in the Internet with a browser. They also film and edit a short video program of a topic of their choice (in groups or individually).

The use of email for communication between students and between students and faculty increases rapidly during the course. An observation that illustrates the popularity of email is that occasionally the students begin to call each other by the IDs of their computer accounts (which are often composed of the first two letters of their first, second and last names).

The course gives 2 credit points (defined in Finland as two weeks' study). It is also possible to take only one credit unit by choosing to take only part of the course. In this case, consultation with the instructors is necessary. Thus, the student can decide what parts of the course are useful to her/him. This policy follows the learning principles adopted. Learning outside the course (e.g. working in a radio station, constructing web pages, editing video) is given credit; the learning has to be described in the diary. Thus, learning is self-directed. The following excerpt and those presented later are from the learning diaries written by students (translated from Finnish to English by the present writer)

It was good to be responsible for one's learning.

Collaborative learning and learning from peers are encouraged. The students are also encouraged to experiment with the technical equipment, e.g. video cameras and computers. Attempts are made to create an informal and supportive atmosphere in the departmental computer labs. Game-playing with the computers is mentioned as something positive, even though games have not been installed in the Department computers (save occasionally...).

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I've noticed that computers make studying easier—and I also like just to play with them.

The students describe many kinds of positive learning experiences.

It was my first experience of the WWW. I learned to pass the threshold to search for information through the computer.

I learned so much about the Internet that I was able to help others to get started.

A result of the course: here I am, writing this learning diary with a computer, all by myself. A big leap.

This course was a real present to me. I've started to use computers—and I learn more every day.

The students value the wide choice of communications technologies represented at the course. They also value the up-to-date information they receive.

I could never believe that I would be so enthusiastic about something [email] that has with computers to do.

World Wide Web simply sucks you in. Time flies when surfing around the world. It feels very up-to-date to know something about multimedia and WWW, even though they are such new phenomena.

To sum up, student reaction to the course has generally been favourable. However, to understand the experiences of the students more profoundly and to be able to make the course better, a closer examination of three areas was undertaken on the basis of the diaries and the surveys. Below, the entry level of students, learner types, and concerns of the students in the communications technology course will be described.

3. Methods

During three years (1994—1996), 161 students have taken the communications technology course. About three-fourths of them are female. During the course, students keep a diary with a word processor. They are instructed to reflect on their learning and attitudes in their diaries. Learning by writing has been advocated by e.g. Walker (1985), who emphasizes that writing helps to integrate old and new knowledge and to recognize and take account of affective aspects of the learning process.

The diaries (N=161) were analyzed qualitatively, searching for common themes and themes that differentiate the students. The results are described through three major themes: entry level, learner type, and students' concerns. The desciption of instruction and learning during the course presented above is also based on the learning diaries.

Quantitative data on the students' self-perception of their skills in communications technology was also gathered. At the first class meeting the students filled a questionnaire on their skills in various types of computer programs, operating systems, Internet services as well as video and audio work. The questionnaire aimed to determine the skills of the students when they start the course. Selected results from this material are reported in this paper to illustrate changes from 1994 to 1997 in the

ability to use of Internet services. The data for 1994—1996 (N=161) have been complemented with data for 1997 (N=50).

This paper mainly deals with the portions of the diaries that have to do with computers, digital media and communication through computers. Reflections on video and audio work are largely omitted in this paper; analog technology was still used in 1994—1996.

4. Results

4.1. Entry level

Communications technology is characterized by continuous and rapid change. Each generation of students is more "computer and media literate". The questionnaire administered to first-year students at the onset of the course in 1994—1997 gives information about the use of internet services. Figure 1 shows the percentage of students who reported that they know how to use email, how to browse in the World Wide Web and how to construct web pages by means of HTML.

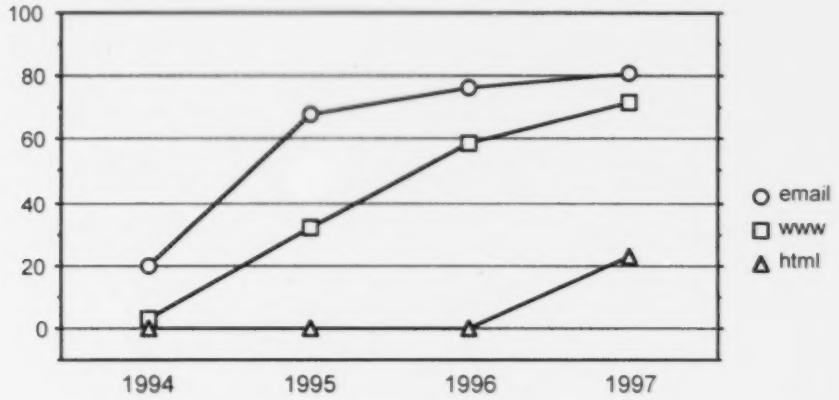

Figure 1: Percentage of students who report they can use email, WWW, and construct web pages (html) at the onset the communications technology course in 1994—1997.

The figure shows that in 1995 the majority of students reported to be familiar with email use, in 1996 with WWW use. It is possible that as early as 1998 the majority of the students entering the Department will be familiar with web page construction. Computers are common in Finnish schools (albeit there is variation between schools). Many schools have already created web pages (see e.g. Education in Finland, http://www.edu.fi/english/). All Finnish public libraries also provide free Internet services (see e.g. Finnish Public Libraries, http://www.lib.hel.fi/syke/english/).

The topics to be covered during the course will undoubtedly change: topics that now are advanced (and treated in advanced courses), tend to become less advanced and included in the basic skills covered in the communications technology course. Such topics may soon include DTP programs, digital video editing and digital sound editing. For instance, there was a workshop in analog tape

recording and editing in 1994 and 1995, but it was dropped in 1996, as the technology is so common as to be invisible for the students. However, the workshop will probably be reinstalled—only with digital sound recording and editing this time. In fact, a digital sound workstation has been acquired for radio work in 1996. The contents of the communications technology course need to be in a flux.

4.2 Learner types

When the course starts, the students differ in their basic attitude toward computers and digital technology. An analysis of the diaries revealed four types of learners, characterized as (1) I-know-nothing-about-computers, (2) computers-are-not-for-me, (3), computers-are-tools, and (4) I-know-just-about-everything-about-computers. These types are clearly visible in the beginning of the course. As the course proceeds, many students change (especially from types 1 and 2 to type 3).

I-know-nothing-about-computers

The first type consists of students inexperienced with computers. They have typically had little access to computers in their homes and for some reason they have not profited from computer instruction in elementary and secondary school.

> *I didn't have a clue [about text processing].*
>
> *I've never done anything with computers.*
>
> *I could never imagine that ordinary people like students can design and produce multimedia.*

Some students, especially of this type, emphasize gender. Theoretically, such an emphasis can be manifested in feelings of superiority or inferiority. However, male students did not write about feelings of superiority over female students. Neither did female students express superiority over male students. On the other hand, female more than male students wrote about feelings of inferiority, about their computer anxiety. Some female students appear to be influenced by stereotypical sex roles (cf. Busch 1995).

> *At home we've always had the latest models of computers, but I've never used them for more than writing essays. Even then my brother took care of technical questions and I just wrote...*
>
> *I'm a girl, I know nothing about computers. [Of course, this may self-irony.]*

Even though some female students appear to think in the line of I'm-a-girl-and-girls-cannot-use-computers, they were quick to learn during the course, and gained in confidence. All they seemed to need was experience with computers and some guidance. A further factor behind their success may be the lack of male students in many groups. Corston and Colman (1996) have shown that in certain computer tasks female subjects do better in an all-female group than with males present, whereas male subjects do well irrespective of the gender of the group. As the female students often worked in small all-female groups (about three-fourths of the students in the course being female), they were usually free from a possible hampering effect caused by males in the group.

Computers-are-not-for-me

The second learner type consists of students who are anxious about computers. Some students have had bad learning experiences in secondary school. In some schools, a technical approach to computers prevails or used to prevail with emphasis on DOS and programming languages.

> *My fear of computers originated in high school when I desperately tried to learn DOS commands.*
>
> *Help! Lots of communications technology is being pushed toward me!*
>
> *I'm afraid of mistakes. Confronting a strange computer, I don't know what to do. Nevertheless, I've been brave and tried. Often the computer has crashed. With red cheeks I have asked for help from an expert.*
>
> *Even though the teacher said that it is easy to use computers, I have the feeling that as soon as my finger approaches the keyboard, the screen will black out.*

Some students appear to rationalize their fear with a vague "humanistic" position against computers.

> *I'm against computers as they are inhuman and I support humanistic values.*

Computer anxiety clearly diminished during the course. Key factors appeared to be the ease of word processing and the pleasure of communicating by means of email both with local and far-away friends.

> *During this course I have learned to use computers to communicate and to help me in daily tasks such as writing term papers.*
>
> *This is a big leap for me: writing my diary with a computer.*
>
> *My phobia of communications technology decreased during the course; I got the courage to use computers.*

The first two learner types share a cautious or negative attitude to computers. These students had an overwhelmingly successful learning experience during the course, as evidenced by several examples above. In general, they were satisfied with the course. They appear open for new experiences, for learning new ways to work.

> *I had not used email before. I took my time to explore the possibilities [in a practice session]. I was glad to find out that some of my friends had already sent email to me.*
>
> *When looking back at my diary, I notice that on September 16 I write that I want instruction on the use of email; on October 21 I write that I have been using email the whole semester.*
>
> *I had a negative attitude to multimedia, maybe due to my inexperience with computers. Luckily, the multimedia clas— where you experience multimedia with your eyes and ears—changed my attitude to more positive.*
>
> *In the practice sessions, things that were new to the teachers cropped up. It was a relief to understand that nobody knows everything about computers—it encourages experimentation and learning by trial.*
>
> *I've never done anything with computers. First I was a bit afraid whether I would learn anything, but the fear proved out to be groundless.*

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Computers-are-tools

The third type consists of students who simply regard the computer as a useful tool. These students have often had ample access to computers at home, in secondary school or at the university. Some of them have used computers at work.

> *I've been using computers for word processing for several years. I've noticed that the differences between programs are not large; if you know one, you can use the other.*

These students learned during the course that there are more possibilities in computers and communications technology than they were familiar with. They learned new uses for computers, such as the Internet. They also had the possibility of weighing their attitudes, e.g. toward various operating systems of computers. The hardened Windows user had the possibility to use and evaluate a Macintosh, and vice versa.

I-know-just-about-everything-about-computers

The fourth learner type consists of computer "nerds", who know much about computers and are highly interested in computers and other aspects of communications technology. These "power users" may have been using computers for 10—15 years by the time they enter the university. Sometimes they tend to think that others are like them

> *It is ridiculous to believe that my generation is afraid of computers. Wake up!*

Some students of this type were not satisfied with the course. How can these students be motivated? One solution is to advise them not to take part in the course; the course is not obligatory (and, in fact, some first-year students chose not to take the course). Another solution is to advise them to take only half the normal credit and concentrate on areas not too familiar, thus widening their knowledge of some areas of communications technology. A further solution is to give them extra assignments, e.g. to create web pages with the help a senior student employed for the purpose (as done in 1996).

> *It was very interesting and very challenging to design your web pages. I'm sure I'll have use for my web page construction skills.*

Female and male students do not in general differ much in their diaries or in the survey. However, male students are "over-represented" in the I-know-just-about-everything-about-computers type, though there are also female students of that type. Boys are more often interested in technology than girls. Consequently, male students tend to have more experience with computers than female students when they start their university studies. It is plausible that experience with computers better accounts for female/male differences in computer attitudes and use than gender. Scott and Rockwell (1997:55) state that "there appear to be minimal gender differences with regard to future use of technologies". They regard experience "a strong predictor of future use for all new technologies" (Scott and Rockwell (1997:55; see also Colley, Gale & Harris 1994).

4.3 Concerns of students

The students were concerned about many things in their diaries. The concerns were divided in four groups: (1) low or high level of difficulty of the course, (2) concern for other students, (3) resources, and (4) future.

The level of the course

Some students had concerns about the difficulty of the course, about not being taught, advised and guided enough. Some were bewildered by procedures and technical terms that they didn't understand right away.

> *Teach right away how to make backup copies of files—my learning diary got lost in hyperspace.*

> *Drive C? Cut, Copy and Paste? Word and WordPerfect? 5.1 and 6.0? Resolution? News, FTP, TCP-IP?*

In spite of all efforts in secondary school, some students simply can't cope with computers when they start the course. For some time, they continue in their "habitual helplessness".

On the other hand, some students considered the level of the course too low. They criticized the course for being superficial and atomistic, teaching little about much. These students often belonged to learner type 4, the computer nerds. Perhaps they expected too much from a basic course in communications technology. In contrast to these students, others had realistic expectations.

> *I didn't learn much new.*

> *I guess it was not the purpose to learn all about everything during the course, but to get us interested in communication technology.*

Concern about fellow students

Some of the students expressed concern about fellow students. Consequently, they helped each other.

> *I'm afraid that the students with little experience about computers don't know enough to participate in discussions of, e.g. multimedia and the Information Society.*

Resources

One concern was the small number of videocameras, computers and computer programs, and the age of the technology (even though most of it has been acquired within 3—4 years). Students who have the latest videocameras, computers and programs in their homes expect the same from the University—and are surprised to find out that this is not always the case. Some students pointed out that outdated equipment gives a bad image of the Department. Some students were quick to notice problems in converting files created with later program versions to earlier file formats.

> *I was much surprised at the 'poverty' of the Department when it comes to computers. I had thought that in a Department specializing in communications everything would be top modern and abundant.*

What can I say? Dances with PC history... (Written in 1994 when Dances with Wolves was being shown.)

Future

Some students of learner types 1 and 2 reflect on the causes of not being up-to-date with communications technology. They also worry about the future.

Why am I left out of the train of Information Society? I don't own a computer with fancy accessories.

I wish I owned a computer and had much more time.

Kids half my age play with computers. I used to play with Barbie dolls. Is there any hope for me in the Information Society?

5. Discussion

The students reported many positive learning experiences during the course. On the whole, they valued the instruction and the curriculum. The students especially valued the self-directedness of the course and their personal learning responsibility. They had several concerns as well: the difficulty level of the course, lack of resources, outdatedness of technology. They also expressed concern about fellow students. Many students worried about the future, feeling left behind. They felt they needed more money and more time to catch up with the Information Society. On the other hand, as shown in Figure 1, an increasing number of them is well versed in computers and the Internet when they start their university studies.

Learner types 1—2 (I-know-nothing-about-computers and computers-are-not-for-me) were the great gainers during the communications technology course. In fact, they might also be regarded as one type: type 1 students are inexperienced with computers, type 2 students have negative experiences. Anyway, they were the ones who learn much during the course and who valued the wide range of communications technology in the course. They were open to new tools and new ways to work. Learner types 3 and 4 (computers-are-tools, I-know-just-about-everything-about-computers) were more difficult to please. They had an occasional critical remark about the superficiality of the course. Nevertheless, many of them made themselves useful by helping other students to get started.

Schrage (1991) emphasizes the essence of technology competence as adapting technology to oneself, to one's context, to one's goals. "The virtue of good tools is that they don't ask you to become someone else. They invite you to create an extension of yourself that, with a little time and skill, lets you be more than what you are. Tools are a medium for self-expression." (p. 66)

The course in communications technology appears to have succeeded in helping the students adopt good tools for their studies and for their future work, tools that are increasingly digital. Digital tools will probably be used in their future workplaces. In working life, abilities such as the following will be accentuated: the ability to learn, to adapt oneself to deep-going changes, to work in groups, to find

information, to communicate face-to-face and by means of computers (cf. Veiga & Dechant 1997). Besides computer-mediated communication, students of communication obviously need to develop their skills in face-to-face communication: "high tech" needs to be complemented with "high touch".

The course paves the way to a collaborative university (Acker 1995) with on-line access to library searches, the Internet and individual class resources by means of email, electronic bulletin boards and web pages. A collaborative university (or department) makes use of academic groupware, encouraging faculty and students to be members of groups that meet from independent places either synchronously or asynchronously, groups that do not have to be in one place.

However, some students were very concerned about such technologies

> *Are all these new technologies really necessary? Do they replace contacts between human beings?*

In our experience, computer-mediated contacts do not replace personal contacts but complement them in routine matters such as arranging when to meet or submitting a term paper. As such contacts can be handled effectively, more time can be allotted to face-to-face interaction between faculty and students.

The course in communications technology appears to help students with less computer experience to a good start toward the digital world. Support for the continued development of the course and for empowering the students with communications technology comes from students

> *Please give the course next year too, so that also the new students suffering from technophobia—if there are any—will conquer their fear.*

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